REMARKS

Reconsideration of this application is requested.

The pending claims are prior claims 1-12, as amended herein, and new claim 13.

Claim 1 has been amended to specify that the applicant's flavoring composition is a "cinnamon" flavor composition. This is consistent with the Examiner's suggested title and serves to underscore the novelty and unobviousness of the applicant's invention.

New claim 13 more specifically defines the applicant's flavor composition in "closed" fashion. Basis for the claim is found throughout the applicant's disclosure. See, for example, page 1, last ¶.

A new title has been provided as required.

The specification has also been amended to refer to the application's national phase status.

Additionally, the specification has been amended to include headings on the lines suggested by the Examiner.

Claim 11 has been amended to obviate the Examiner's objection to claims 11 and 12. Withdrawal of the objection is requested.

The claims have also been amended in view of the Examiner's Section 112, 2nd ¶ rejection of claims 3-6, 8 and 11-12. As amended, the claims are thought to be clear and definite and otherwise in acceptable form. Accordingly, the Examiner is requested to reconsider and withdraw the Section 112, 2nd ¶ rejection.

The Examiner is also requested to reconsider the Section 102(b) rejection of claims 1-4, 8-9 and 11-12 as anticipated by Bessette et al. (U.S. 6,004,569). The reference does not disclose the applicant's invention as defined by the rejected claims.

More specifically, the Examiner's attention is called to the fact that the applicant's claims specify a "flavour" composition, i.e. a composition suitable for use in flavoring, e.g. in oral care products. The Bessette et al. patent is concerned with pesticides. These clearly are not flavor compositions or suitable for use as flavoring materials. The applicant's compositions, therefore, differ fundamentally from the pesticides disclosed by Bessette et al.

The Examiner notes that Bessette et al. disclose pesticidal compositions comprising alpha-terpineol, eugenol and cinnamic alcohol in acetone. It is doubtful that one would use acetone in a flavor composition or for something to be used

orally. Furthermore, the Bessette et al. products include a significant amount of alpha-terpineol. Such products would not be suitable as flavor compositions.

The Examiner refers specifically to Sample 3B of Bessette et al. (Col. 5, lines 5-6) as showing a composition of alpha-terpineol, eugenol, cinnamic alcohol and acetone. However, Sample 3B does not anticipate the applicant's claims as the Sample 3B product contains too much alpha-terpineol to provide an acceptable flavor composition. Alpha-terpineol is widely used as a perfume ingredient due to its pine aroma and it can also be used in low levels as a flavor ingredient. Applicant attaches a copy of an extract from S. Arctander, Perfume and Flavor Chemicals (Montclair, N.J., 1969), which states near the end of the entry for alpha-terpineol that, when used as a flavor ingredient, alpha-terpineol is present at a level of from 5 to 40 ppm in the finished product. It is noted in this regard that the lowest level of alpha-terpineol disclosed in 3B of Bessette et al. is 15 wt% (when cinnamic alcohol is present at its maximum amount of 35 wt% and eugenol is present at its maximum amount of 50 wt%). From page 4, 3rd ¶ of the present application, the Examiner will see that the lowest level that the claimed flavor compositions will be present in a composition is 0.15 wt%, when the product is a mouthwash. Thus, if 3B were used at the lowest possible level in a mouthwash, it would result in a concentration of 0.0225 wt% (15% of 0.15%), or 225 ppm in the final product. This is more than 5 times greater than the maximum level typically used according to the Arctander reference. Such a product would, therefore, not be acceptable for consumption or oral use. The conclusion must, therefore, be that 3B is not a flavor composition because it contains too much alpha-terpineol. It is, accordingly, submitted, with respect, that applicant's claim 1 and consequently, claims 2-4, 8-9 and 11-12 define subject matter which is novel over, and not anticipated by, Bessette et al. Accordingly, the Examiner is requested to reconsider and withdraw the Section 102(b) rejection based on Bessette et al.

For basically similar reasons, the Examiner is requested to reconsider and withdraw the Section 102(b) rejection of claims 1-4 and 8-11 as anticipated by Slangan et al. (U.S. 3,917,870). The Examiner refers to Example VIII of Slangan to support the Section 102(b) rejection. This example describes a perfume formulation containing a host of components including cinnamic alcohol and eugenol together with a major amount of terpineol (400 parts by weight compared to 60 parts cinnamic alcohol and 20 parts eugenol). This large amount of terpineol means that the composition is not suitable as a flavor component for reasons noted above with respect to Bessette et al.

It is also noted that the materials heliotropin, aubepine and 4-(4-hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde (Lyral), all mentioned as components in the perfume compositoin of Slangan's Exmaple VIII, are only used in perfume formulations and never used in flavor compositions. Note in this regard the attached printout from the website www.thegoodscentscompany.com, which states that Lyral is not for flavor use.

For all of the above reasons, the applicant submits that Slangan does not anticipate any of the applicant's claims. Accordingly, withdrawal of the Section 102(b) rejection of claims 1-4 and 8-11 based on Slangan is requested.

The Examiner is also requested to reconsider and withdraw the Section 103(a) rejection of claims 1-12 as obvious from the combination of Slangan et al. in view of "Common Fragrance and Flavor Materials" by Bauer et al. The applicants respectfully submit that there is no suggestion in the references, no matter how viewed, of the applicant's flavor compositions or products containing the same. The applicant's invention is directed to providing flavor compositions which taste of cinnamon without requiring cinnamic aldehyde. There is no disclosure or suggestion in either of the Examiner's references that the applicant's combination of cinnamic alcohol and eugenol would or could provide a useful cinnamon flavor composition which did not include or require cinnamic aldehyde. The applicant has provided such a composition and, with respect, it is submitted that the applicant's composition is both novel and unobvious. Accordingly, withdrawal of the Section 103(a) rejection is requested.

For the reasons stated, it is submitted that claims 1-12 define new and unobvious compositions or products based thereon. The same is true for new claim 13 which is even further removed from the art in view of its closed "consisting essentially of" language.

Favorable reconsideration with allowance is requested.

Respectfully submitted,

MORGAN LEWIS & BOCKIUS LLP

By _____
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Reg. No. 16773

Date: November 21, 2007

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www.thegoodscentscompany.com

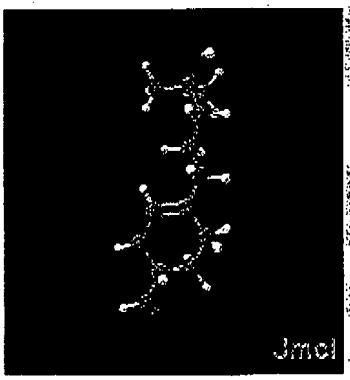
leerall

Right Click Picture For More Options. (Safari 1.2 (v125) Compatible).

4-(4-hydroxy-4-methylpentyl) cyclohex-3-ene-1-carbaldehyde

InChI=1/C13H22O2/c1-13(2,15)9-3-4-11-5-7-12(10-14)8-6-11/h5,10,12,15H,3-4,6-9H2,1-2H3

InChIKey : ORMHZBNNECIKOH-UHFFFAOYAY



☐ Van der Waals surface

☐ Spin

cas number : 31906-04-4

ec number : 250-863-4

molar refractivity : 63.23 ± 0.3 cm3

parachor : 525.2 ± 6.0 cm3

index of refraction : 1.527 ± 0.02

surface tension : 42.6 ± 3.0 dyne/cm

density : 1.023 ± 0.06 g/cm3

polarizability : 25.06 ± 0.5 10-24cm3

xlogp : 2.50

molecular weight : 210.3125800

formula : C13 H22 O2

fda reg :

h. number : 2912.30.0000

synonyms :

- 4-(4-hydroxy-4-methyl pentyl) cyclohex-3-ene carbaldehyde
- 3-(4-hydroxy-4-methyl pentyl) cyclohex-3-ene-1-carbaldehyde
- 3 and 4-(4-hydroxy-4-methyl pentyl)-3-cyclohexene-1-carboxaldehyde
- 4-(4-hydroxy-4-methyl pentyl)-3-cyclohexene-1-carboxaldehyde
- hydroxyisohexyl 3-cyclohexene carboxaldehyde
- 4,4-hydroxymethyl pentyl cyclohexene carbaldehyde
- kovanol
- landolal
- lyral
- mugonal

soluble in :

- alcohol
- water, very slightly

insoluble in :

- paraffin oil
- water

organoleptics :

odor type : floral

odor strength : medium

odor description : at 100.00 %. floral muguet cyclamen rhubarb woody

substantivity : 400 Hour(s)

properties :

appearence : colorless to pale yellow clear viscous liquid

assay : 97.00 - 100.00 %

specific gravity : 0.98900 - 0.99700 @ 25.00 °C.

pounds per gallon - calc. : 8.229 to 8.296

refractive index : 1.48600 - 1.49300 @ 20.00 °C.

acid value : 5.00 max. KOH/g

logp : 2.53

shelf life : 24.00 month(s) or longer if stored properly.

storage : store in cool, dry place in tightly sealed containers, protected from heat and light. store under nitrogen.

stability :

- alcoholic fine fragrance, good
- alcoholic lotion
- antiperspirant, good
- deo stick
- detergent perborate
- fabric softener, good
- hard surface cleaner
- liquid detergent
- shampoo
- soap, good

(odor and/or flavor) blends with :

- acetaldehyde ethyl phenethyl acetal
- acetate C-10
- acetoin
- alcohol C-10
- alcohol C-11 undecylic
- alcohol C-12
- alcohol C-9

safety :

most important hazard (s) : Xi - Irritant

flash point (Deg. F.) : 200.00 °F. TCC (93.33 °C.)

IFRA critical Effect : Sensitization

limits in the finished product for - "leave on the skin contact" :
1.5000 % Restriction.

limits in the finished product for - "wash off the skin contact" :
1.5000 % Restriction.

limits in the finished product for - "no skin contact" :
15.0000 % Restriction.

recommendation for usage levels up to :
20.0000 % in the fragrance concentrate.

recommendation for usage levels up to :
not for flavor use.

safety links :

msds : msds

toxnet : 31906-04-4

epa-srs : 31906-04-4

pubchem : 31906-04-4

ifra : ifra - (Found under : HMPCC)

other :

CofA

references :

aldehyde C-10
aldehyde C-11 undecylenic
aldehyde C-12 lauric
aldehyde C-12 mna
aldehyde C-14
aldehyde C-16
aldehyde C-18
aldehyde C-9
algae absolute
allyl amyl glycolate
allyl cyclohexyl propionate
amber carbinol
ambroxan
iso amyl benzoate
alpha- amyl cinnamaldehyde
iso amyl salicylate
amyris wood oil
angelica root oil
anise seed oil
para- anisyl acetate
para- anisyl alcohol
armoise oil
bay leaf oil
beeswax absolute
benzoin resinoid
benzophenone
benzyl acetate
benzyl alcohol
benzyl cinnamate
benzyl isoeugenol
benzyl propionate
benzyl salicylate
bergamot oil
blood orange oil
bois de rose oil
iso bornyl acetate
laevo- bornyl acetate
iso butyl cinnamate
caraway seed oil
cardamom seed oil
carnation absolute
carrot seed oil
cassia bark oil
cedarwood oils
cinnamyl alcohol
citronellol
citronellyl acetate

Perfume and Flavor Chemicals

(Aroma Chemicals)

II

By

STEFFEN ARCTANDER

CONSULTANT
LECTURER:
RUTGERS UNIVERSITY
THE STATE UNIVERSITY OF NEW JERSEY
UNIVERSITY EXTENSION DIVISION
NEWARK, N. J. (U.S.A.)

PUBLISHED BY THE AUTHOR 1969

MONTCLAIR, N.J. (U.S.A.)

Steffen Arctander, publisher
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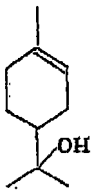
Library of
Congress Catalog Card Number 75-91398

Printed in Denmark by Det Hoffensbergske Etablissement,
Copenhagen V., Denmark

2877: alpha-TERPINEOL

1-Methyl-*4-iso*-propyl-*1*-cyclohexen-*8*-ol
para-Menth-*1*-en-*8*-ol

The commercial perfume grade material is mainly *alpha*-Terpineol with 3 to 5% *beta*-Terpineol and traces of other alcohols.



$C_{10}H_{18}O = 154.25$

Colorless, slightly viscous liquid.
B.P. 219° C. Solidifies in the cold, melts at 35° C. (with considerable variations according to purity). Sp.Gr. 0.94.

Very slightly soluble in water, soluble in alcohol, Propylene glycol, Mineral oil and perfume and flavor materials.

The odor of high-grade *alpha*-Terpineol being delicately floral and sweet of Lilac type, it is very strongly influenced in presence of minute amounts of impurities of different odor type. The most common undesirable odors are the more volatile terpenes and terpene alcohols (see *1*-Terpinenol) and the less volatile phenols, often occurring in traces in "European type" Terpineol. *beta*-Terpineol is the main impurity among the more volatile ones.

A "piney" odor from the more volatile impurities and a dry-medicinal odor from the less volatile ones are the most harmful olfactory notes to destroy the Lilac floralcy of perfumery grade Terpineol. It is common practise of the large users of perfumery grade *alpha*-Terpineol to purchase commercial grade Terpineol and purify their own perfumery grade from that.

Terpineol for flavor purpose should be of equally high olfactory (organoleptic) purity, except perhaps for Lime flavors, where certain qualities, unacceptable for a Lilac perfume, will be suitable for Lime flavor. But generally, a very high grade Terpineol is necessary.

alpha-Terpineol (or commercial Terpineol) is one of the most commonly used of all perfume chemicals. Its very low cost, ex[illegible] availability, general stability in air, solvents and other chemicals, etc. and versatility in compositions make it an ever day, all-purpose material in most perfumery laboratories and compounding factories, though exact figures are not available, annual world consumption of Terpineol for perfumery purposes can be estimated at not less than 10,000 metric tons. However, only a relatively small portion of this volume is truly highgrade *alpha*-Terpineol, the bulk being a commercial "high-*alpha*"-grade material, which in the U.S.A. is priced very near the cost of Diethylphthalate.

As a basic component in Lilac perfumes and a major component of many varieties of Pine fragrances (lower grades of Terpineol will usually suffice) as common ingredient in Fougères, Appleblossoms, fragrances for household products, soaps, detergents, etc. it has very little competition.

Perfumers all over the world have for decades discussed the quality of Terpineol, and expressed their preference for one or the other type. It is understandable that the American perfumer is satisfied with the Terpineol most common to that continent, the Terpineol isolated from Pine oil, but it is not always easy to appreciate the terms "Lilac" for the *alpha*-Terpineol and "Hyacinth" for the *beta*-Terpineol.

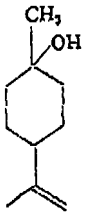
The "European type" Terpineol, on the other hand, is rarely contaminated with *beta*-Terpineol (almost absent when Terpineol is made by acid hydrolysis of *alpha*-Pinene). The most annoying impurity in this type Terpineol is *iso*-Borneol, while traces of phenolic components may impair the terminal notes of that Terpineol.

It has come so far, that customers have requested *beta*-Terpineol for perfumery purposes, often and unfortunately based upon analytical information dating back prior to the use of Gas-Liquid-Chromatography as a means of analysis in combination with Infrared spectroscopy, Mass-spectometry and perhaps Nuclear Magnetic Resonance readings.

It seems beyond doubt that *alpha*-Terpineol

the most popular is
nows of no attempt t
imed at producing a
eta-Terpineol in the
hat is commonly acc
The acetate of *bet*
classified as "more
acetate from *alpha*-Ter
be welcome by the m
himself left with a sur
after vacuumdistillatio
alpha-Terpineol is u
in various flavor comp
flavors, Lemon, Lim
Ginger, Anise, Peach,
for Frankfurter sau
flavors. The concentr
as low as 5 to 40 ppm
highest in Citrus and
G.R.A.S. F.E.M.A
Prod.:
1) by isolation from

Δ-8,9-para-Menthene
1-Methyl-*4-iso*-prope
The *trans-beta*-Terpi
form of *beta*-Terpine



Colorless, slightly
Sp.Gr. 0.93. Solid
again at 33° C. B.
Very slightly solu
cohol and oils.
Pungent-woody-c
of moderate tenacit
The common od
is a bit difficult to
first encounter with
See monograph

mmonly used of all per-
very low cost, excellent
stability in air, soap,
chemicals, etc. and its
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pounding factories. Al-
are not available, the
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can be estimated at not
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"high-*alpha*"-grade mate-
S.A. is priced very near
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onent in Lilac perfumes
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soaps, detergents, etc. it
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reciate the terms "Lilac"
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" Terpineol, on the
contaminated with *beta*-
absent when Terpineol is
drolysis of *alpha*-Pinene).
impurity in this type
borneol, while traces of
ls may impair the terminal
ool.
far, that customers have
pineol for perfumery pur-
unfortunately based upon
tion dating back prior to
uid-Chromatography as a
in combination with Infra-
Mass-spectometry and per-
netic Resonance readings.
doubt that *alpha*-Terpineol

is the most popular isomer, and the author knows of no attempt to promote a synthesis aimed at producing a higher proportion of *beta*-Terpineol in the reaction mixture than what is commonly accepted today.

The acetate of *beta*-Terpineol has been classified as "more interesting" than the acetate from *alpha*-Terpineol. This could only be welcome by the manufacturer who finds himself left with a surplus of the *beta*-isomer after vacuumdistillation of the total Terpineol.

alpha-Terpineol is used in discrete amounts in various flavor compositions, such as berry flavors, Lemon, Lime, Nutmeg, Orange, Ginger, Anise, Peach, etc. and in spice flavors for Frankfurter sausages, or in "Lilac" flavors. The concentration used is normally as low as 5 to 40 ppm in the finished product, highest in Citrus and Spice compositions.

G.R.A.S. F.E.M.A. No.3045.

Prod.:

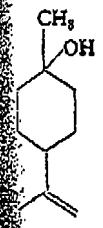
1) by isolation from American Pine oil.
2) from *alpha*-Pinene via Terpin hydrate or directly to Terpineol by hydration.
3) from Pentane tricarboxylic acid by cyclization, followed by esterification, via the Hydroxyester to the unsaturated ester, and by Grignard reagent to Terpineol.
4) from Isoprene and Methyl vinyl ketone with Methyl magnesium iodide.

Methods No. 3) and 4) are "purely synthetic" using acyclic starting materials. They are of no commercial interest as long as raw materials for methods 1) and 2) are available in volume.

34-806; 67-517; 88-55; 104-537; 104-634; 106-330; 140-127; 85-113; 156-328; 163-71; 163-238; 163-377;
Glidden Co., data sheet May 1961.
Hercules Powder Co., data sheets.
Arizona Chemical Co. data sheets.

2878: beta-TERPINEOL

Δ-8,9-para-Menthenol-*1*.
1-Methyl-*4-iso*-propenyl cyclohexan-*1*-ol.
The *trans-beta*-Terpineol is the most common form of *beta*-Terpineol.



$C_{10}H_{18}O$ = 154.25

Colorless, slightly viscous liquid.
Sp.Gr. 0.93. Solidifies in the cold, melts again at 33° C. B.P. 210° C.
Very slightly soluble in water, soluble in alcohol and oils.
Pungent-woody-earthy, but not piney, odor of moderate tenacity.
The common odor description "Hyacinth" is a bit difficult to appreciate, particularly at first encounter with the title material.
See monograph "*alpha*-Terpineol" (preceding this) for comments on the odor of the two isomers.

beta-Terpineol is rarely used as such in perfume compositions, but it is a common companion to the *alpha*-isomer in commercial grade Terpineol. It has also been suggested for the manufacture of Terpinyl acetate as it is preferred by some perfumers for that purpose.

It seems beyond doubt, that the *alpha*-Terpineol is the only suitable Terpineol for better grades of Lilac fragrances and other, similar florals, while the *beta*-Terpineol is no serious drawback in Pine fragrances, Fougères and ordinary fragrances for soaps, detergents and other household products.

The author has no report of this material being used in flavor compositions.

Prod.:

1) from fractions of Steam distilled Pine oil.
2) from "heads" or foreruns of the rectification of Terpineol made via *alpha*-Pinene and Terpin hydrate.
3) by reduction of Limonene epoxide.

67-517; 88-82; 106-330; 156-328; 163-71; 163-238; 163-377;